SVKM's
D. J. Sanghvi College of Engineering

Program: B.Tech in Electronics Engineering **Academic Year: 2022** **Duration: 3 hours**
Date: 05.01.2023
Time: 10:30 am to 01:30 pm
Subject: Microprocessors and Microcontrollers (Semester V) **Marks: 75**

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.

(1) This question paper contains two pages.
(2) All Questions are Compulsory.
(3) All questions carry equal marks.
(4) Answer to each new question is to be started on a fresh page.
(5) Figures in the brackets on the right indicate full marks.
(6) Assume suitable data wherever required, but justify it.
(7) Draw the neat labelled diagrams, wherever necessary.

Question No.		Max. Marks
Q1 (a)	Explain AVR status register.	[05]
Q1 (b)	i. Explain following instructions. a) LDI b) STS c) IN d) COMe) DEC ii. Explain Assembler Directives.	[05] [05]
Q2 (a)	i. Assume XTAL = 8 MHz, write a program to generate square wave with period of 12.5 us (micro seconds) using timer. ii. Explain interfacing of DC motor with AVR.	[06] [04]
Q2 (b)	Explain USART Control and Status Register A.	[05]
Q3 (a)	Explain 4x4 keyboard interfacing with AVR.	[05]
Q3 (b)	i. Explain I/O Port structure in AVR. ii. Write a code to read Data from PORTC and send it to PORTB.	[05] [05]
Q4 (a)	i. Explain interfacing of DAC with AVR. ii. Explain Interrupt structure in AVR.	[04] [04]
Q4 (b)	Explain Pentium Branch Prediction logic.	[07]
Q5 (a)	**Solve any two.** i. Explain the Memory Organisation of AVR. ii. Explain the CTC Mode of Timer with a suitable example, iii. Explain the ADCSRA Register of AVR microcontroller.	 [05] [05] [05]
Q5 (b)	Explain 8086 Programmer's Model.	[05]